

CLAIMS WITH INDICATED CLAIM REVISIONS

A marked-up version of the claims is provided to indicate the claim amendments with particularity as well as the revision status.

13. (ONCE AMENDED) An apparatus comprising:

an integrated circuit generating subscriber loop control signals in response to a sensed tip signal and a sensed ring signal of a subscriber loop, the sensed tip and ring signals received by the integrated circuit; and

a linefeed driver for driving a subscriber loop in accordance with the subscriber loop control signals, the linefeed driver providing the sensed tip and ring signals.

REMARKS

Applicant respectfully requests the Examiner's consideration of the present application, as amended.

Summary of Office Action

Claims 1-23 are pending.

Claim 4 was rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,721,774 of Stiefel ("Stiefel").

Claims 1, 13, and 15 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,828,748 of Akhteruzzaman ("Akhteruzzaman") in view of Stiefel.

Claims 2-3, 14, and 17 were rejected under 35 U.S.C. § 103 as being unpatentable over Akhteruzzaman, in view of Stiefel and U.S. Patent No. 5,926,544 of Zhou ("Zhou").

Claim 5 was rejected under 35 U.S.C. § 103 as being unpatentable over Stiefel in view of U.S. Patent No. 5,854,550 of Knollman ("Knollman").

Claims 6-7 were rejected under 35 U.S.C. § 103 as being unpatentable over Stiefel in view of Zhou.

Claims 8-9 were rejected under 35 U.S.C. § 103 as being unpatentable over Stiefel in view of Knollman and U.S. Patent No. 5,881,129 of Chen ("Chen").

Claims 10-12 were rejected under 35 U.S.C. § 103 as being unpatentable over Stiefel in view of U.S. Patent No. 5,721,774 of Bellenger, et al. ("Bellenger").

Claims 16 and 18 were rejected under 35 U.S.C. § 103 as being unpatentable over Akhteruzzaman in view of Stiefel and Knollman.

Claims 19 and 20 were rejected under 35 U.S.C. § 103 as being unpatentable over Akhteruzzaman in view of Stiefel, Knollman, and Chen.

Finally, claims 21-23 were rejected under 35 U.S.C. § 103 as being unpatentable over Akhteruzzaman in view of Stiefel and Bellenger.

Response to 35 U.S.C. § 102 rejections

Claim 4 was rejected under 35 U.S.C. § 102 as being anticipated by Stiefel.

In particular, the Examiner stated that Stiefel teaches:

sense circuitry (CL) providing a sensed tip signal and a sensed ring signal, wherein the sensed tip and ring signals correspond to a tip current and a ring current of the subscriber loop (see col. 5, lines 19-37).

(07/05/02 Office Action, p. 2)

Applicant respectfully traverses the Examiner's characterization of Stiefel. Applicant finds no support in the cited portion of Stiefel for the Examiner's statement. The cited portion discusses ac impedance to ground and requirements imposed if the tip and ring conductors are to be provided with longitudinal ac balance. The Examiner is respectfully requested to indicate with particularity where circuitry that provides a sensed tip signal and circuitry that provides a sensed ring signal may be found in the cited reference.

Circuitry CL is a current limiting circuit which limits the average and peak values of loop current. (see Stiefel, col. 3, lines 1-60). Applicant assumes that the Examiner is attempting to analogize the ac signal discussed in the portion cited by the Examiner to applicant's sensed tip and sensed ring signals.

Referring to subsequent portions of the cited reference, any ac signal appearing at the collector of Darlington connected transistors Q101 and Q102 is

used to generate an ac feedback signal which is subsequently provided to the base of the Darlington connected transistors to cancel out the ac signal at the collector of the Darlington connected transistors and thus establishing the collector of the Darlington connected transistors at virtual ac ground. (Stiefel, col. 5, lines 38-58)

At best, the ac signal appearing at the collector of the Darlington connected pair of transistors could represent one or the other of the tip and ring signals or some mathematical combination of the tip and ring signals (e.g., loop current). Even if we assume, *arguendo*, that the ac signal appearing at the collector of the Darlington connected transistors is "sensed" or represents a sensed signal, *this ac signal clearly cannot be both a sensed tip signal and a sensed ring signal*. (see Stiefel, Fig. 1)

Thus applicant submits the cited reference does not teach or suggest a subscriber loop linefeed driver having *sense circuitry providing a sensed tip signal and a sensed ring signal, wherein the sensed tip and ring signals correspond to a tip current and a ring current of the subscriber loop*.

In contrast, claim 4 includes the language:

4. A subscriber loop linefeed driver comprising:
power circuitry for providing battery feed to a ring node and a tip node of a subscriber loop in accordance with a linefeed control signal; and
sense circuitry providing a sensed tip signal and a sensed ring signal, wherein the sensed tip and ring signals correspond to a tip current and a ring current of the subscriber loop.

(Claim 4)(*emphasis added*)

Thus applicant submits claim 4 is not anticipated by the cited reference under 35 U.S.C. § 102. Given that claims 5-12 depend from claim 4, applicant submits claims 5-12 are likewise not anticipated by Stiefel.

Applicant respectfully submits the rejections under 35 U.S.C. § 102 have been overcome.

Response to 35 U.S.C. § 103 rejections

Claims 1-3 and 5-23 were rejected under 35 U.S.C. § 103 as being unpatentable in view of various combinations of Akhteruzzaman, Stiefel, Zhou, Knollman, Chen, and Bellenger. Applicant respectfully submits, however, that the claims are patentable in view of the cited references.

In order to sustain a rejection under 35 U.S.C. § 103, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA 1974). Moreover, all words in a claim must be considered in judging the patentability of the claim against the prior art." *In re Wilson*, 165, USPQ 494, 496 (CCPA 1970) (see MPEP § 2143.03)

Applicant respectfully submits that the references, alone or combined, *do not teach an integrated circuit having sense inputs for a sensed tip signal and a sensed ring signal of a subscriber loop, wherein the integrated circuit generates a subscriber loop linefeed driver control signal in response to the sensed signals.*

The Examiner stated that Akhteruzzaman teaches an integrated circuit package comprising:

an integrated circuit (213) having sense inputs for a sensed tip signal (203A) and a sensed ring signal (203B) of a subscriber loop, wherein the

integrated circuit (213) generates a subscriber loop linefeed driver control signal in response to the sensed signals.

(07/05/02 Office Action, p. 3).

Applicant traverses the Examiner's characterization of Akhteruzzaman. Assuming *arguendo* that Akhteruzzaman suggests that processor 213 is an integrated circuit, applicant notes that Akhteruzzaman's sensed tip and ring signals are not provided to processor 213.

To the contrary, Akhteruzzaman's tip (203A) and ring (203B) signals are connected to battery feed circuit 206 *external* to processor 213 with no connection to processor 213. (Akhteruzzaman, Fig. 2). The battery feed circuit includes voltage detection circuitry 205. Voltage detection circuitry calculates V_{loop} as the difference between the tip 203A and ring 203B signals. V_{loop} 229 (i.e., not the sensed tip or ring signal) is then provided to processor 213.

Thus contrary to the Examiner's assertions, *processor 213 does not receive either the sensed tip signal 203A or the sensed ring signal 203B as claimed by the Examiner.* (Akhteruzzaman, col. 3, lines 46-54).

Akhteruzzaman was relied upon for rejecting independent claims 1 and 13. Applicant submits *none of the references alone or combined teaches or suggests an integrated circuit having sense inputs for a sensed tip signal and a sensed ring signal of a subscriber loop, wherein the integrated circuit generates a subscriber loop linefeed driver control signal in response to the sensed signals.*

In contrast, claim 1 includes the language:

1. An integrated circuit package comprising:
an integrated circuit having sense inputs for a sensed tip signal and a sensed ring signal of a subscriber loop, wherein the integrated circuit generates a subscriber loop linefeed driver control signal in response to the sensed signals,

wherein the linefeed driver does not reside within a same integrated circuit.

(Claim 1)(*emphasis added*)

Claim 13 similarly include the language:

13. An apparatus comprising:
an integrated circuit generating subscriber loop control signals in response to a sensed tip signal and a sensed ring signal of a subscriber loop, the sensed tip and ring signals received by the integrated circuit; and
a linefeed driver for driving a subscriber loop in accordance with the subscriber loop control signals, the linefeed driver providing the sensed tip and ring signals.

(Claim 13)(*emphasis added*)

Thus applicant submits claims 1 and 13 are patentable under 35 U.S.C. § 103 in view of the cited references.

No 35 U.S.C. § 103 rejection was made with respect to claim 4. Claims depending from claim 4 were rejected under 35 U.S.C. § 103, however. Applicant respectfully submits claim 4 is patentable under 35 U.S.C. § 103 in view of the cited references for the same reasons discussed above with respect to the 35 U.S.C. § 102 rejection.

If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. (see MPEP § 2143.03 citing *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988)). Given that claims 2-3 depend from claim 1, claims 5-12 depend from claim 4, and claims 14-23 depend from claim 13, applicant respectfully submits claims 2-3, 5-12 and 14-23 are patentable under 35 U.S.C. § 103 in view of the cited references.

Applicant respectfully submits the rejections under 35 U.S.C. § 103 have been overcome.

Conclusion

In view of the amendments and arguments presented above, applicant respectfully submits the applicable rejections and objections have been overcome. Accordingly, claims 1-23 as amended should be found to be in condition for allowance.

If there are any issues that can be resolved by telephone conference, the Examiner is respectfully requested to contact the undersigned at (512) 858-9910.

Respectfully submitted,

Date November 5, 2002 William D. Davis
William D. Davis
Reg No. 38,428